Kodak
Image Sensor Solutions

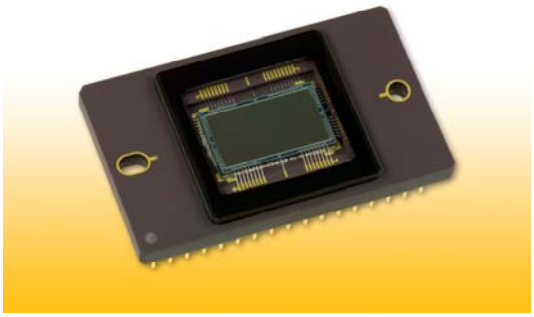
PRODUCT SUMMARY

KODAK KAI-02150 IMAGE SENSOR

1920 (H) X 1080 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

DESCRIPTION

The KODAK KAI-02150 Image Sensor is a 1920 (H) x 1080 (V) resolution, 2/3" optical format, progressive scan interline CCD. A flexible readout architecture is used that enables the use of either 1, 2 or 4 outputs to achieve frame rates up to 64 fps. The vertical overflow drain structure provides antiblooming protection and enables electronic shuttering for precise exposure control. Other features include low dark current, negligible lag and low smear.



FEATURES

- Progressive scan readout
- High frame rate
- Flexible readout architecture
- High sensitivity
- Low noise architecture
- Improved smear performance
- Electronic shutter

APPLICATIONS

- Industrial Imaging

Parameter	Typical Value
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	2004 (H) x 1144 (V)
Number of Effective Pixels	1960 (H) x 1120 (V)
Number of Active Pixels	1920 (H) x 1080 (V)
Pixel Size	5.5 µm (H) x 5.5 µm (V)
Active Image Size	10.56mm (H) x 5.94mm (V) 12.1mm (diagonal) 2/3" optical format
Aspect Ratio	16:9
Number of Outputs	1, 2, or 4
Charge Capacity	20,000 electrons
Output Sensitivity	34 µV/e
Quantum Efficiency KAI-02150-ABA (500nm)	50 %
Quantum Efficiency KAI-02150-CBA R(620nm), G(540nm), B(470nm)	31 %, 42 %, 43 %
Read Noise (f= 40MHz)	12 electrons rms
Dark Current	Photodiode: 7 electrons/s VCCD: 140 electrons/s
Dark Current Doubling Temperature	Photodiode: 7 °C VCCD: 9 °C
Dynamic Range	64 dB
Charge Transfer Efficiency	0.999999
Blooming Suppression	> 300 X
Smear	-100 dB
Image Lag	< 10 electrons
Maximum Pixel Clock Speed	40 MHz
Maximum Frame Rates	17 fps (single output) 33 fps (dual output) 64 fps (quad output)
Package	68 pin PGA
Cover Glass	AR Coated, 2 Sides

Unless noted, all parameters above are specified at T = 40° C

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ORDERING INFORMATION

Catalog Number	Product Name	Description	Marking Code
4H2039	KAI-02150-AAA-JR-BA	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02150-AAA Serial Number
4H2040	KAI-02150-AAA-JR-AE	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2041	KAI-02150-ABA-JD-BA	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02150-ABA Serial Number
4H2042	KAI-02150-ABA-JD-AE	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2043	KAI-02150-ABA-JR-BA	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	
4H2044	KAI-02150-ABA-JR-AE	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2045	KAI-02150-CBA-JD-BA	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02150-CBA Serial Number
4H2046	KAI-02150-CBA-JD-AE	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	

Please see ISS Application Note "Product Naming Convention" (MTD/PS-0892) for a full description of naming convention used for KODAK image sensors.

For all reference documentation, please visit our Web Site at www.kodak.com/go/imagers.

Address all inquiries and purchase orders to:

Image Sensor Solutions
Eastman Kodak Company
Rochester, New York 14650-2010

Phone: (585) 722-4385
Fax: (585) 477-4947
E-mail: imagers@kodak.com

Kodak reserves the right to change any information contained herein without notice. All information furnished by Kodak is believed to be accurate.